**WHAT IS CLAIMED IS:**

1. A microarray of oligonucleotides, said microarray comprising a plurality of HLA Class I oligonucleotide probes on a solid support, said plurality of probes being sufficient to represent at least 80% of known polymorphisms in the HLA Class I locus.

2. A microarray in accordance with claim 1, wherein said plurality of probes is sufficient to represent at least 90% of known polymorphisms in the HLA Class I locus.

3. A microarray in accordance with claim 1, wherein said plurality of probes is sufficient to represent at least 98% of known polymorphisms in the HLA Class I locus.

4. A microarray in accordance with claim 1, wherein each of said plurality of HLA Class I oligonucleotide probes is covalently attached to said solid support and has from 17 to 23 nucleotides.

5. A microarray in accordance with claim 4, wherein each of said plurality of HLA Class I oligonucleotide probes has 20 nucleic acids.

6. A microarray in accordance with claim 4, wherein said HLA Class I oligonucleotide probe is selected from the group consisting of HLA-A oligonucleotide probes, HLA-B oligonucleotide probes and HLA-C oligonucleotide probes.

7. A microarray in accordance with claim 6, wherein said HLA Class I oligonucleotide probe is selected from the group consisting of HLA-A exon 2 and exon 3 oligonucleotide probes, HLA-B exon 2 and exon 3 oligonucleotide probes and HLA-C exon 2 and exon 3 oligonucleotide probes.

8. A microarray in accordance with claim 6, wherein said HLA Class I oligonucleotide probe is selected from the group consisting of HLA-B exon 2 and exon 3 oligonucleotide probes.

9. A microarray in accordance with claim 4, wherein said solid support is a glass slide.

10. A microarray in accordance with claim 4, wherein said plurality of HLA Class I oligonucleotide probes are present on said solid support at a surface density of from about 250 to about 450 angstrom$^2$/molecule.

11. A microarray in accordance with claim 4, wherein said plurality of HLA Class I oligonucleotide probes are present on said solid support at a surface density of from about 325 to about 375 angstrom$^2$/molecule.

12. A method of preparing an array of covalently-attached oligonucleotide probes, said method comprising;

(a) contacting a solid support with an aminoalkyltrialkoxysilane in the vapor phase at reduced pressure to form an aminoalkylsilane-derivatized solid support; and

(b) contacting said aminoalkylsilane-derivatized solid support with a linking group to covalently attach said linking group to said aminoalkylsilane-derivatized solid support to form a linking-group modified solid support; and

(c) attaching a plurality of oligonucleotide probes to said linking group modified solid support to form said array of covalently-attached oligonucleotide probes.

13. A method in accordance with claim 12, wherein said contacting of step (a) is carried out at reduced pressure and with heating.

14. A method in accordance with claim 12, wherein said aminoalkyltrialkoxysilane is aminopropyltrimethoxysilane.

15. A method in accordance with claim 12, wherein said linking group is 1,4-phenylenediisothiocyanate.

16. A method in accordance with claim 12, wherein said plurality of oligonucleotide probes is a plurality of HLA Class I oligonucleotide probes.

17. A method in accordance with claim 12, wherein said plurality of oligonucleotide probes is a plurality of HLA-B oligonucleotide probes and is sufficient to represent all known polymorphisms in exons 2 and 3 of the HLA-B locus.

18. A method of HLA Class I tissue typing, said method comprising:

(a) amplifying exons 2 and 3 from a genomic sample of tissue using labeled primers and an asymmetric PCR method to form a labeled, single-stranded DNA sample;

(b) contacting said labeled, single-stranded DNA sample with a microarray prepared according to claim 12 under hybridization conditions; and

(c) detecting a hybridization pattern for said DNA sample and assigning an HLA Class I allele type by analysis of said hybridization pattern.

19. A method of HLA tissue typing, said method comprising:

(a) selectively amplifying the HLA regions in a genomic sample using asymmetric PCR and labeled primers to form a labeled, single-stranded DNA sample;

(b) contacting labeled, single-stranded DNA sample with a microarray prepared according to claim 12 under hybridization conditions; and

(c) detecting a hybridization pattern for said DNA sample and assigning an HLA allele type by analysis of said hybridization pattern.

20. A method of HLA-B tissue typing, said method comprising:

(a) amplifying exons 2 and 3 from a genomic sample of tissue using labeled primers and an asymmetric PCR method to form a labeled, single-stranded DNA sample;

(b) contacting said labeled, single-stranded DNA sample with the microarray of claim 4 under hybridization conditions; and

(c) detecting a hybridization pattern for said DNA sample and assigning an HLA-B allele type by analysis of said hybridization pattern.